

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 37-39, 41, 45-47, 66-67, and 69-72. Please add new claims 73 and 74.

Claims 1 - 35. (canceled)

Claim 36. **(currently amended)** An isolated protein with differentiation-inducing activity on Friend erythroleukemia cell lines comprising all of the following properties:

- a. induction of differentiation in Friend erythroleukemia cell lines with hemoglobin formation in said cell lines;
- b. a molecular weight in the range of about 10-60 kDa as determined by gel filtration on a cross-linked allyl dextran; and
- c. comprising an amino acid sequence selected from the group consisting of:
  - i. an amino acid sequence which is encoded by the cDNA of SEQ ID NO:4 an expression of the corresponding mRNA in primary cells of the thymus, fetal liver, adult spleen, or bone marrow;
  - ii. an amino acid sequence which is encoded by a cDNA hybridizing to the cDNA of SEQ ID NO:4 under stringent hybridization conditions;
  - iii. an amino acid sequence corresponding to SEQ ID NO:5'; and
  - iv. variants of the amino acid sequence corresponding to SEQ ID NO:5 wherein said variants retain said properties (a) and (b) and are encoded by a cDNA comprising SEQ ID NO:6 or SEQ ID NO:7 or a combination thereof
- ~~d. is encoded by a cDNA comprising repeat sequences of SEQ ID NOS: 6 and 7;~~
- ~~e. wherein the corresponding mRNA comprises mRNA species of differing length, said mRNA species comprising:~~
  - ~~i. identical 3' regions corresponding to the coding region of SEQ ID NO:2;~~
  - ~~and~~
  - ~~ii. non-identical 5' regions.~~

Claims 37 - 41. (canceled)

Claim 42. **(currently amended)** ~~Protein according to claim 36, comprising variants of said protein comprising an amino acid sequence wherein said variant retains said differentiation inducing activity on Friend erythroleukemia cell line or a A fusion protein comprising said the protein of Claim 36 or said variant.~~

Claim 43 - 47. (canceled)

Claim 48. (withdrawn) DNA fragment according to SEQ ID NO:1 or NO:2 or NO:4 or the complementary strand thereof, portions, derivatives, and analogues thereof each coding for a polypeptide having at least differentiation-inducing activity on Friend erythroleukemia cell lines.

Claim 49. (withdrawn) DNA fragments, portions, analogues, and derivatives thereof each coding for a polypeptide having at least differentiation-inducing activity of Friend erythroleukemia cell lines hybridizing to the cDNA according to SEQ ID NO:1 or NO:2 or NO:4 and/or which are degenerated by the genetic code.

Claim 50. (withdrawn) DNA fragments, portions, analogues, and derivatives thereof each coding for a polypeptide having at least differentiation-inducing activity of Friend erythroleukemia cell lines hybridizing to the cDNA according to SEQ ID NO:1 or NO:2 or NO:4 under stringent conditions and/or which are degenerated by the genetic code.

Claim 51. (withdrawn) DNA fragments of claim 48, characterized in that said DNA fragment encodes at least a part of a polypeptide with the activity of the human or murine protein having at least differentiation-inducing activity on Friend erythroleukemia cell lines according to one or more of the preceding claims.

Claim 52. (withdrawn) Recombinant vector, characterized in that said vector contains a DNA sequence corresponding to a gene or a DNA fragment encoding the protein with at least differentiation-inducing activity on Friend erythroleukemia cell lines according to claim 36.

Claim 53. (withdrawn) Recombinant vector, characterized in that said vector contains a DNA sequence corresponding to a gene or a DNA fragment encoding the protein with at least differentiation-inducing activity on Friend erythroleukemia cell lines according to claim 36.

Claim 54. (withdrawn) Recombinant vector according to claim 52, characterized in that said vector is derived from a bacterial plasmid, a bacteriophage, or a viral vector.

Claim 55. (withdrawn) Host cell transformed by a vector according to claim 36.

Claim 56. (withdrawn) Method for the preparation of a DNA fragment according to claim 48, characterized in that said fragment comprises screening of a human or murine cDNA clone library using as a probe a DNA fragment of a DNA coding for a murine or human protein having at least differentiation-inducing activity on Friend erythroleukemia cell lines.

- Claim 57. (withdrawn) Monoclonal or polyclonal antibody directed against at least one epitope of a protein having at least differentiation-inducing activity on Friend erythroleukemia cell lines according to claim 36.
- Claim 58. (withdrawn) Therapeutic, diagnostic or experimentally useful means, characterized in that said means contains as an effective substance at least one nucleic acid in an effective amount which hybridizes to a gene or a part thereof encoding the protein having at least differentiation-inducing activity on Friend erythroleukemia cell lines according to claim 36.
- Claim 59. (withdrawn) Means according to claim 58, characterized in that said means contains as an effective substance at least one nucleic acid comprising (a) the nucleotide sequence encoding a protein with at least differentiation-inducing activity on Friend erythroleukemia cell lines, (b) a portion thereof, (c) a nucleotide sequence hybridizing to a nucleic acid as under (a) and/or (b) under stringent hybridization conditions, or (d) a nucleotide sequence complementary to a nucleotide sequence as under (a), (b) and/or (c).
- Claim 60. (withdrawn) Means according to claim 58, characterized in that said nucleic acid optionally is a modified DNA.
- Claim 61. (withdrawn) Means according to claim 58, characterized in that said nucleic acid optionally is a modified RNA.
- Claim 62. **(currently amended)** A therapeutic composition comprising:
- a. ~~the a protein of according to Claim 36, or Claim 42, Claim 73 or Claim 74 a variant or fragment of said protein wherein said variant or fragment retains said differentiation-inducing activity; and~~
  - b. a conventional carrier ~~and/or~~ excipient
- in an amount effective to treat diseases accompanied by an impairment of differentiation-inducing activity in erythropoietic cells ~~the activity of the protein according to claim 36.~~
- Claim 63. (withdrawn) A molecular probe in diagnostics or therapy comprising a means according to claim 58.
- Claim 64. (withdrawn) An antisense nucleic acid for the inhibition of gene expression comprising a means according to claim 58.
- Claim 65. (withdrawn) DNA encoding a protein having at least differentiation-inducing activity on Friend erythroleukemia cell lines, a portion, derivative, or analogue thereof each functioning as a polypeptide with at least differentiation-inducing activity on

Friend erythroleukemia cell lines for the incorporation into a prokaryotic or eukaryotic cell.

Claim 66 - 72. (canceled)

Claim 73. (New) An isolated protein with differentiation-inducing activity on Friend erythroleukemia cell lines comprising all of the following properties:

- a. induction of differentiation in Friend erythroleukemia cell lines with hemoglobin formation in said cell lines;
- b. a molecular weight in the range of about 10-60 kDa as determined by gel filtration on a cross-linked allyl dextran; and
- c. comprising
  - i. an amino acid sequence which is encoded by the cDNA of SEQ ID NO:4;
  - ii. an amino acid sequence which is encoded by a cDNA hybridizing to the cDNA of SEQ ID NO:4 under stringent hybridization conditions, said stringent hybridization conditions comprising hybridization at 65°C in an aqueous solution or at 42°C in 50% formamide and subsequent washing of the filter at 60°C for 30 minutes in an aqueous solution having a salt concentration of 15mM NaCl and a concentration of SDS of 0.1%;
  - iii. an amino acid sequence corresponding to SEQ ID NO:5'; and
  - iv. variants of the amino acid sequence corresponding to SEQ ID NO:5 wherein said variants retain said properties (a) and (b) and are encoded by a cDNA comprising SEQ ID NO:6 or SEQ ID NO:7 or a combination thereof.

Claim 74. (New) A fusion protein comprising the protein of Claim 73.